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(71) Applicant (for all designated States except US):
LIGHTWIRE, INC. [US/US]; 7540 Windsor Drive,
Suite 412, Allentown, PA 18195 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **BAUGH, Brenton, A.**
[US/US]; 934 Loraine Avenue, Los Altos, CA 94024
(US).

(74) Agent: **KOBA, Wendy, W.**; PO Box 556, Springtown,
PA 18081 (US).

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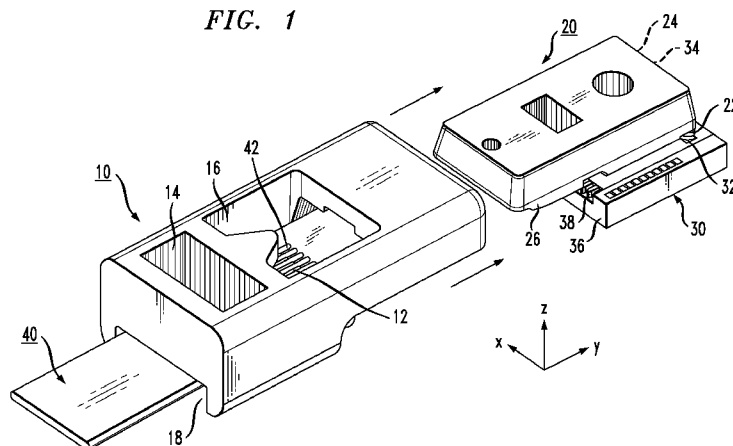
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(54) Title: MULTI-FIBER INTERFACE TO PHOTONIC SUBASSEMBLY

FIG. 1



(57) Abstract: A multiple piecepart alignment and attachment configuration for mating a fiber array (or even a single fiber) with a silicon photonic subassembly utilizes ever-tightening alignment tolerances to align the fiber array with a similar array of waveguides (or other devices) formed within the photonic subassembly. A box-shaped fiber holder is formed to include a plurality of grooves within its bottom interior surface to initially support the fiber array. A separate piecepart in the form of a lid is mated to, and aligned with, the silicon photonic subassembly. The lid is formed to include registration features on its underside that fit into alignment detents formed in the top surface of the silicon photonic subassembly upon attachment. The lid also includes a number of grooves formed on its underside that will capture the top surface of the fibers as the fiber holder is slide into place over the lid. The grooves within the lid function to tighten the pitch of the fiber array and ultimately control the lateral and vertical alignment between the fiber array and the subassembly. The subassembly is also formed to include etched channels along the endface (the channels aligned with optical waveguides/devices in the substrate) to mate with the fiber holder, where the optical fibers are ultimately positioned within the channels so as to be in alignment with the optical waveguides/devices.